

Letters to the Editor . . .

LIFE-LONG POSTVACCINAL IMMUNITY

Supplementing their earlier work, Freund¹ and his associates of the New York City Department of Health report the production of a life-long specific immunity in laboratory animals following injection of a single or multiple dose of emulsified typhoid vaccine. Control animals given the routine saline vaccine showed only an inadequate transient, specific antibody production.

In 1944 Freund² demonstrated that formalin-killed typhoid bacilli emulsified in a mixture of "aquaphor" (a lanolin-like substance) or "falba" (a lanolin derivative) and mineral oil is a much more efficient specific antigen than the same bacilli suspended in salt solution. Control subcutaneous injections of the routine saline vaccine led to the production of slightly more than 100 units of specific agglutinin per cc. of serum by the end of two weeks in rabbits, falling to less than 10 units per cc. by the end of 8 to 10 months. The titer remained at practically zero till death of the animals. The same vaccine dose injected in the form of a falba-mineral oil emulsion, led by the production of an agglutinin titer in the neighborhood of 3,000 units per cc. by the end of 6 weeks, falling to approximately 1,000 units per cc. by the end of 8 to 10 months. The emulsified vaccine was thus from 30 to 100 times more effective than the saline vaccine, depending on the stage of immunity taken for comparison.

Following completion of these tests the serums of all emulsion vaccinated rabbits were titrated monthly till their death. Eighteen of the animals given the emulsified

vaccine died about 18 to 30 months after the final vaccination dose. Their average serum titer 1 month before death was 260 units per cc. Eight of the animals are now living, over 3 years after the final emulsified vaccine dose. Their average serum titer at the present time is 240 agglutinin units per cc., or about twice the second week maximum titer of control animals given the saline vaccine.

Freund concludes from these tests that in rabbits given the emulsified vaccine antibody formation was proceeded actively during the entire 3 year period of observation. Antibodies introduced passively disappear within a few weeks from the circulation. This long duration of antibody formation is analogous to the life-long antibody formation after infection with certain living viruses. A similar sustained postvaccinal immunity has been demonstrated following injection of laboratory animals with emulsified non-viable influenza virus³, which finding has been confirmed on man⁴. Emulsified allergens have not yet been tested.

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REFERENCES

1. Freund, J., and Bonanto, M. V., *J. Immunol.*, 52:231 (March), 1946.
2. Freund, J., and Bonanto, M. V., *J. Immunol.*, 47:325, 1944.
3. Friedewald, W. F., *J. Exp. Med.*, 80:477, 1944.
4. Henle, W., and Henle, G., *Proc. Soc. Exp. Biol. and Med.*, 59:179, 1945.

BOOK REVIEWS

ELECTROCARDIOGRAPH INCLUDING AN ATLAS OF ELECTROCARDIOGRAMS. By Louis N. Katz, A.B., M.A., M.D., F.A.C.P., Director of Cardiovascular Research, Michael Reese Hospital, Chicago, Illinois; Professorial Lecturer in Physiology, University of Chicago, Chicago, Illinois. Cloth. Price, \$12.00. Pp. 883, illustrated with 525 engravings, including over 1,000 electrocardiograms. Second edition, enlarged and thoroughly revised. Philadelphia: Lea & Febiger, 1946.

In this second edition the author has thoroughly revised and expanded his material in the light of recent changes in fundamental concepts and clinical interpretation of the electrocardiogram. The subject is comprehensively surveyed in orderly fashion, and the value of the book as an introduction to the subject and as a source reference is enhanced by its systematic presentation of the material in well defined sections and chapters. Throughout the book illustrative tracings are plentiful, clearly reproduced and well correlated with descriptive material and interpretations. The bibliography is complete but difficult to use, in that it is appended to the three major sections without subdivision by subject or chapter.

Basic electro-physical concepts and appropriate physiologic principles are adequately presented from the author's point of view, as is the controversial subject of the Einthoven hypothesis and vector analysis.

The interpretation of the electrocardiogram and its

correlation with clinical data, and the consideration of the arrhythmias occupy the two major sections of the book. The "patterns" of various electrocardiographic abnormalities are abundantly illustrated and correlated with associated disease processes. In the opinion of the reviewer, the inclusion of the T wave abnormalities seen with acute nephritis, as a specific pattern is not warranted. The author's use of CF₂, CF₄ and CF₆ as routine chest leads solves in part the technical difficulty in obtaining routine multiple chest leads, but at best must be considered a practical compromise in the use of the exploring electrode.

This book should take its place as a valued text book and important reference work on the subject of electrocardiography.

EXERCISES IN ELECTROCARDIOGRAPHIC INTERPRETATION. By Louis N. Katz, A.B., M.A., M.D., F.A.C.P., Director of Cardiovascular Research, Michael Reese Hospital, Chicago, Illinois; Professorial Lecturer in Physiology, University of Chicago, Chicago, Illinois. Cloth. Price, \$6.00. Pp. 288, illustrated with 141 engravings containing 166 electrocardiograms. Second edition, thoroughly revised. Philadelphia: Lea and Febiger, 1946.

This companion atlas of the author's text book of electrocardiography has been thoroughly revised, and additional pertinent illustrative tracings added. As in the previous edition its primary purpose is to initiate

the reader in the approach to the interpretation of the unknown electrocardiogram. This purpose is satisfactorily fulfilled, and an excellent sampling of the varieties of electrocardiograms encountered in clinical practice is presented. Interpretative data and clinical correlations are concisely and conveniently presented. The inclusion of more cases in which necropsy material could be correlated with clinical conclusions would be desirable.

CORNELL CONFERENCES ON THERAPY. Volume One. Edited by Harry Gold, M.D., managing editor; David P. Barr, M.D.; Eugene F. DuBois, M.D.; McKee Cattell, M.D., and Charles H. Wheeler, M.D. Cloth. Price, \$3.25. Pp. 322. New York: The MacMillan Company, 1946.

This volume consists of stenographic notes of therapeutic conferences held at Cornell Univ. Medical College. The subjects of the conferences include such titles as "The Doctor's Bag," "Use and Abuse of Bed Rest," "Digitalis vs. Digitoxin," "Management of Abdominal Distension," etc. Fifteen conferences are listed and include subjects of interest to physicians of all specialties as well as to general practitioners. The discussions are in the nature of round-table informal talks with space allotted for questions from the audience. Each conference is summarized at its end by the moderator. The participants are outstanding members of the faculty and include every department of the Medical College and Hospital.

Of unique interest is the fact that the volume represents a joint venture of men representing both the Department of Medicine and the Department of Pharmacology. As such, the therapeutic discussions are given a physiologic-pharmacologic emphasis that is significant. The cooperative relationship permits the pharmacologist and the clinician to present a balanced discussion.

A notable feature of the book is that it is up-to-date, and includes material published between 1942 and 1946. The discussion of subacute bacterial endocarditis is an example. Another feature that will appeal to many is the presentation and defense of varying opinions by men of experience in the particular field. In the chapter "Digitalis and Digitoxin," considerable difference of opinion was expressed and defended by such outstanding men as Gold, Cattell, Eggleston, Pardee, Stewart, Levy, Modell and Wheeler. The reader is thus given a critical discussion of an important recent development in cardiac therapeutics.

As the editors note in the preface, the published conferences are not intended to substitute for the textbook or the formal lecture or scientific article. Only certain phases of each topic are discussed, usually the recent developments and controversial questions. Nevertheless, the authoritative character of the remarks, the emphasis on pharmacologic-physiologic applications, the opportunity for expression of differences of opinion, the up-to-date material, and the informal manner of presentation make this volume stimulating and instructive, and a most useful method of medical education. The yearly publication of similar conferences would be of great value in presenting changing thought and new developments in therapeutics.

AGNOSIA, APRAXIA, APHASIA—THEIR VALUE IN CEREBRAL LOCALIZATION. By J. M. Nielsen, N.S., M.D., F.A.C.P., Associate Clinical Professor of Medicine (Neurology), University of Southern California; Senior Attending Physician in Neurology and Assistant in Neuropathology, Los Angeles County Hospital, Los Angeles, California. Cloth. Second edition completely revised. Price, \$5.00. Pp. 292, with 59 illustrations. New York, London: Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 1946.

The second edition of this monograph differs from its predecessor but little in matters of concept, but mainly

in presentation of many abstracts of histories upon which the author's concepts are based. In the abstracting of these histories alone, culled from the literature of the world and the author's own extensive experience, a great service to students of this fascinating subject has been performed.

The end of the nineteenth and beginning of the twentieth century saw the heyday of the exponents of precise localization of cerebral function. The carrying over of this extreme localization to the higher cerebral functions resulted in reduction to an absurdity in many instances, with the resultant trend so evident in the present day to consider the brain as functioning as a whole. Healthy as this trend may be, it has to some extent at least resulted in throwing out the goose with the feathers. In helping to reestablish on a firm anatomical and physiologic basis the localization of certain components of cerebral function, more complex than the simple performance of motor acts and the crude appreciation of sensation, yet not of the complexity of those attributes which determine the total personality, Dr. Nielsen has made a very real contribution to neurology. The further tentative presentation of a nomenclature on this basis will, it is to be hoped, eliminate in the future that part of the complexity of the subject which is incidental to confusion of terms.

Although the book is obviously intended for students of neurology, the clear and simple style should make it intelligible to physicians in general, not necessarily as a reference work, but as a means of acquiring a general concept of cerebral function. Certainly the first eight chapters, comprising but 85 pages, presents this subject in the most palatable form in which it can be found in the literature to date.

MODERN MANAGEMENT IN CLINICAL MEDICINE. By F. Kenneth Albrecht, M.D., S.A. Surgeon, U. S. Public Health Service; Kansas State Tuberculosis Consultant; formerly Clinical Director, U. S. Marine Hospital, Baltimore, Md. Cloth. Price, \$10.00. Pp. 1238, illustrated. Baltimore: The Williams and Wilkins Company, 1946.

This book contains an amazing amount of material, well arranged and easy to find. It embraces the whole field of internal medicine and diagnosis by laboratory procedures. It contains a large number of references to modern literature dealing with all the latest therapeutic and diagnostic procedures. It discusses innumerable subjects from psychotic states to industrial poisons and tropical diseases.

It is, in fact, a vade mecum of internal medicine which has been so expanded that it has become a reference work for the library or office.

Criticisms of this type of book are usually justifiable in that the clinical descriptions of disease are too rigid and oversimplified and the therapeutic procedures, in most part, represent meddlesome medicine. Dr. Albrecht has not fallen into these errors. The busy practitioner who is too "busy" to keep up with modern medical advances will be rewarded by real help when he uses this book as a guide. He will often solve his problems by the use of the references to recent literature which follow the subjects discussed in the book.

This volume is the best of this type which has appeared and should prove valuable to every internist.

THE BIOLOGY OF SCHIZOPHRENIA. By R. G. Hoskins, Ph.D., M.D., Director of Research, Memorial Foundation for Neuro-Endocrine Research, Harvard Medical School and Worcester State Hospital, New York: W. W. Norton & Company, Inc., 1946. Cloth. Price, \$2.75. Pp. 191.

In this brief, well written volume, Dr. Hoskins has brought to bear on the subject of schizophrenia insights

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